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ABSTRACT

This report is an evaluation of a New York City school district educational project funded under Title VII of the Elementary and Secondary Education Act of 1965. The project was designed to offer bilingual instructional and supportive services to 9th and 10th grade Hispanic students. Its objectives were (1) to increase student performance on the New York City Language Fluency Scale, (2) to increase student performance in reading achievement in both English and in the native language; (3) to increase student competency in social studies, science, and math; (4) to increase the attendance of the students in the program; and (5) to instill more positive attitudes toward self and school in these students. Detailed statistics showed that the objectives of the program were met. (Author/BS)

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EVALUATION REPORT

Function No. 09-67620

BUSHWICK HIGH SCHOOL BILINGUAL

BICULTURAL PROJECT

SCHOOL YEAR-1975-1976

PROGRAM EVALUATOR: JACOB ABRAMSON

An evaluation of a New York City school district educational project funded under Title VII of the Elementary and Secondary Education Act of 1965 (PL 89-10) performed for the Board of Education of the City of New York for the 1975-76 school year

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THE BUSHWICK BILINGUAL-BICULTURAL PROGRAM

CHAPTER I: THE PROGRAM

Program Description

The Bushwick Bilingual-Bicultural Program is designed to offer bilingual instructional and supportive services to 9th and 10th grade Hispanic students.

The target population consists of approximately 250 Hispanic language dominant students receiving intensive instruction in English as a second language; instruction in the native language in the three content areas of Social Studies, Science and Mathematics; instruction in their native language not only to develop linguistic skills but also to reinforce their cultural identity. The students receive in addition, Health Education, Music and Art classes with the rest of the school population. Through the latter and also participation in the lunchroom and assembly programs the program participants will be integrated with the rest of the school.

The program was in operation for the entire school year 1975-1976.

Program Objectives

1. As a result of the program, a higher percentage of students at final test time will be rated "A-C" in the expressive mode, and rated "1-3" in the receptive mode than at initial test time on the NYC Language Fluency Scale.

2. As a result of the program, the students will demonstrate a statistically significant gain in reading achievement beyond normal expectancy as measured by a pre-post administration of the Stanford Reading Achievement Test.

3. As a result of the program, the students will demonstrate a statistically significant gain in native language reading achievement as measured by a pre-post administration of the Pruebas de Lectura Tests of the Inter-American Series.

4. As a result of the program, the percentage of students who pass uniform examinations in, or receive passing grades in the content areas of Social Studies, Science and Mathematics will at least equal that percentage of comparable regular students.

5. As a result of the program, the attendance percentage of program students will be higher than the attendance percentage of the school as a whole.

6. As a result of the program, a higher percentage of students at final test time will relate more positively to the school setting and toward themselves than at initial test time as measured by a pre-post administration of a "Student Self-Rating Scale" in the native language.

CHAPTER II: EVALUATIVE PROCEDURES

Evaluation Objectives

1. To determine if, as a result of the program, a higher percentage of students at final test time will be rated "A-C" in the expressive mode, and rated "1-3" in the receptive mode than at initial test time on the NYC Language Fluency Scale.
2. To determine if, as a result of the program, the students will demonstrate a statistically significant gain in reading achievement beyond normal expectancy as measured by a pre-post administration of the Stanford Reading Achievement Test.

3. To determine if, as a result of the program, the students will demonstrate a statistically significant gain in native language reading achievement as measured by a pre-post administration of the Pruebas de Lectura Tests of the Inter-American Series.

4. To determine, if as a result of the program, the percentage of students who pass uniform examinations in, or receive passing grades in, the content areas of Social Studies, Science and Mathematics will at least equal that percentage of comparable regular students.

5. To determine,if as a result of the program, the attendance percentage of program students will be higher than the attendance percentage of the school as a whole.

6. To determine, if as a result of the program, a higher percentage of students at final test time will relate more positively to the school setting and toward themselves than at initial test time as measured by a pre-post administration of the "Student Self-Rating Scale" in the native language.

CHAPTER III: FINDINGS

Students Ability to Speak English

The rating scale has seven separate letter classifications ranging from G ("child has been in class less than one week, and cannot be accurately rated at this time") to A ("speaks English, for his age level, like a native - with no foreign accent or hesitance due to interference of a foreign language"). In view of the direction of improvement from G to A, the percentage of students rated A,B,or C at initial and final test times was ascertained. As a result of the program, there was a significant increase in the percentage of students rated A,B,or C in ability to speak English from initial to final testing.

TABLE I

Percentage Change in Students Ability to Speak English from Initial to Final Testing

	No.	Rated A,B,C		% Diff.	SE % Diff.	t	p
		No.	%				
Initial	197	66	33.5	18.3	4.90	3.735	.01
Final	197	102	51.8				

As can be seen in the above table, 51.8% of the students were rated A,B,C at final test time, compared with 33.5% at initial test time - an increase of 18.3%. This percentage increase was statistically significant at less than the .01 level. It should be noted that no students were rated A at final test time and only 2.5% of the students were rated G at initial test time.

Students Ability to Understand Spoken English

The STUDENTS ABILITY TO UNDERSTAND SPOKEN ENGLISH rating scale has seven separate number classifications, ranging from 7 ("child has been in class less than one week and cannot be accurately rated at this time") to 1 ("understands with ease and without conscious effort the spoken English in the classroom, typical for native English-speaking children of like age and grade level"). In view of the direction of improvement from 7 to 1, the percentage of students rated 1,2, or 3 at initial and final test times was ascertained. As a result of the program, there was a significant increase in the percentage of students rated 1,2,3 in ability to understand spoken English from initial testing to final testing.

TABLE II
Percentage Change in Students Ability to Understand Spoken English from Initial to Final Testing

	No.	Rated 1,2,3		% Diff.	SE % Diff.	t	p
		No.	%				
Initial	197	77	39.1	24.8	4.88	5.082	.01
Final	197	126	63.9				

As can be seen in the above table, 63.9% of the students were rated no more than 3 at final test time, compared with 39.1% at initial test time - an increase of 24.8%. This percentage increase was statistically significant at less than the .01 level.

It should be noted that 2.0% of the students were rated 1 at final test time and only 2.5% of the students were rated 7 at initial test time.

Reading Achievement in English

In Table I it is shown that both 9th,10th and 11th plus 12th grades combined increased in total reading achievement by an amount greater than predicted by the historical regression technique.

TABLE III

Significance of Mean Total Grade Score Differences Between Predicted Post-Test Scores and Actual Post-Test Scores on the Stanford Reading Achievement Test - By Grade

Grade	No.	Pre-Test Mean	Est. Posttest Mean	Est. Posttest S.D.	Act. Posttest Mean	Act. Posttest S.D.	Mean Diff. (Est.-Act.)	Corr. (Est.-Act.)	SEMd	t	p
9th	63	1.84	1.95	.52	2.22	.70	.27	.530	.077	3.506	.01
10th	46	2.45	2.58	.91	2.82	.87	.24	.755	.118	2.035	.05
11-12th	55	3.27	3.35	1.24	3.71	1.30	.36	.822	.101	3.564	.01

As can be seen in Table III,the expected gain in reading achievement from pre- to post testing was about 1.1 school months for both 9th and 10th grade students. For 11th and 12th grade students combined, the expected gain was almost one school month. The 9th grade students gained 2.7 school months more than expected from initial to final testing and this difference was statistically significant at less than the .01 level. The 10th grade students gained 2.4 school months more than expected from initial to final testing and this difference was statistically significant at less than the .05 level. The 11th and 12th grade students combined gained 3.6 school months more than expected from initial to final testing and this difference was statistically significant at less than the .01 level. At final test time, the 9th grade students were functioning 7.7 school years below grade norm (9.9); the 10th grade students were functioning 8.1 school years below grade norm (10.9); and the 11th and 12th grade students combined were functioning at least 8.2 school years below grade norm (11.9).

Reading Achievement in Spanish

In Table IV, it is shown that 9th, 10th, 11th and 12th grade students combined increased their reading achievement in Spanish from initial testing to final testing. The period from initial testing to final testing was 5 school months.

TABLE IV

Significance of Mean Total Raw Score Differences
Between Initial and Final Test Scores on the
InterAmerican Series - Prueba De Lectura - By Grade

		Initial		Final		Mean	Corr. (Init.-			
Grade	No.	Mean	S.D.	Mean	S.D.	Diff.	Final	SEMd	t	p
9th	44	60.9	22.47	69.8	21.95	8.9	.881	1.65	5.394	.01
10th	32	79.3	15.73	81.0	11.41	1.7	.769	2.04	.833	NS
11-12th	49	73.3	28.93	78.1	26.83	4.8	.919	1.03	4.660	.01

As can be seen from Table IV, the 9th grade students gained 9 points from initial to final testing,with the mean gain being statistically significant at less than the .01 level. The mean gain of the 10th grade students was 2 points and this difference was not statistically significant. The mean gain of the 11th and 12th grade was 5 points, and this difference was statistically significant at less than .01 level.

Comparison of Subjects Passed

Students in the bilingual program received native language instruction in the subject areas of Science, Mathematics and Social Studies in addition to ESL instruction.

Regardless of attend nce, there was a percentage increase of 4.3% in the total number of subjects passed when comparing the Spring 1976 term with the Fall 1975 term. In Science, there was an increase of 8.3%; in Mathematics, an increase of 10.5%; but only the percentage increase in Mathematics was statistically significant at the .05 level. In Social Studies, there was a decrease of 4.8% . The percentage of students passing ranged from 55.4% in Mathematics to 78.0% in Social Studies in the Fall 1975 term. In the Spring 1976 term, the percentage of students passing ranged from 65.9% in Mathematics to 76.3% in Science.

TABLE V

Comparison of Subjects Passed
Fall 1975 and Spring 1976

	Fall 1975			Spring 1976			
Subject	No.Taking Subject	Subjects Passed No.	Passed %	No.Taking Subject	Subjects Passed No.	Passed %	% Diff.
Science	150	102	68.0	114	87	76.3	+ 8.3
Social Studies	186	145	78.0	186	137	73.7	- 4.8
Mathematics	177	98	55.4	164	108	65.9	+ 10.5
Total	513	345	67.3	464	332	71.6	+ 4.3

A sub-group was created consisting of those students who received native language instruction in any one subject in both the fall and spring term. Based upon this sub-group analysis, 75.8% passed their subjects in the fall of 1975 compared with 76.1% in the spring of 1976, an increase of 0.3%.

Comparison of Achievement of Bilingual and Regular Students in the Subject Areas of Science and Mathematics

As a result of the program, a higher percentage of bilingual students passed the final examination when given in the native language in Science and Biology than regular students taking the same subject matter in English.

TABLE VI
Percentage Comparison of Final Examination Results in Science and Biology combined Between Bilingual and Regular Students - June 1976

Group	Register	Passed No.	Passed %	% Diff.	SE % Diff.	t	p
Bilingual	93	57	61.3	26.8	6.67	4.018	.01
Regular	119	41	34.5				

In the above table, 61.3% of the bilingual students as compared with 34.5% of the regular students passed final examinations in Science and Biology. The difference of 26.8% in favor of the bilingual group was statistically significant at less than the .01 level.

As a result of the program, a higher percentage of bilingual students passed the final examination when given in native language in mathematics than regular students taking the same subject matter in English.

TABLE VII
Percentage Comparison of Final Examination Results in Mathematics Between Bilingual and Regular Students - June 1976

Group	Register	Passed No.	Passed %	% Diff.	SE % Diff.	t	p
Bi-lingual	33	13	39.4	21.2	9.58	2.213	.02
Regular	77	14	18.2				

As can been seen from the table, 39.4% of the bilingual students as compared with 18.2% of the regular students passed the final examination in mathematics. The difference of 21.2% in favor of the bilingual group was statistically significant at less than the .01 level.

Comparison of Achievement of Bilingual and Regular Students in the Subject Areas of Science and Mathematics

As a result of the program, a higher percentage of bilingual students received passing grades in mathematics than regular students receiving instruction in English.

TABLE VIII

Percentage Comparison of Final Grades in Mathematics Between Bilingual and Regular Students - June 1976

Group	Register	Passed No.	Passed %	% Diff.	SE % Diff	t	p
Bi-lingual	143	90	62.9				
				28.1	4.47	6.286	.01
Regular	620	296	34.8				

As can been seen from the table, 62.9% of the bilingual students as compared with 34.8% of the regular students achieved passing grades in mathematics. The difference of 28.1% in favor of the bilingual group was statistically significant at less than the .01 level.

Attendance

The average percentage of attendance of the program participants for the school year 1975-76 was 89% . The average percentage of attendance for the school as a whole was 75% - a percentage difference of 14.8% in favor of the program participants.

Lateness

As a result of the program, the average number of latenesses for program participants was significantly less than the average number of latenesses for a comparable group of regular students.

TABLE IX

Comparison of Average Number of Latenesses of Program Participants and Regular Students

Group	No.	Mean No. of Late.	S.D.	Mean Diff.	SEMn Diff.	t	p
Program	105	2.91	2.79				
				6.27	.822	7.628	.01
Regular	105	9.18	7.94				

As can be seen from the above table, the average number of latenesses of program participants was 3 as compared to 9 for regular students. Thus, the average number of latenesses of program participants was 6 less than that of regular students. This difference in favor of the program participants was statistically significant at less than the .01 level.

Attitude Toward School

Some 85 students completed the "Student Self Rating" form in their native language at initial and final administration. There were some 27 statements; on 19, if the student chose 1,2,or 3, it was considered a positive response. On the remaining 8 statements, if the student chose 5,6 or 7, it was considered a positive response.

Using a criterion of 80% or more positive responses per item at final administration, 70.4% (19 of 27 items) met this criterion compared with 55.6% (15 of 27 items) at initial administration.

From initial to final administration, on 74.1% of the items (20 out of 27 items), the participants demonstrated an increase in positive responses. On 13 of the 20 items, there was an increase of 5% or less; on the remaining 7 items, the percentage increase ranged from 9.5% to 17.0% with the percentage change on 6 of the 7 items being statistically significant at less than the .02 level.

Discrepancy Analysis

The evaluator made some five to six site visits. On each of these visits, he met with the coordinator and followed a typical program of the program participants which was as follows: major subject area instruction in native language, native language instruction, and ESL instruction. Attentiveness and discipline was evident as shown by the high degree of involvement and participation of the students in all subject areas as well as the interaction between students and teachers.

CHAPTER IV: SUMMARY OF MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Findings: 1. A significantly higher percentage of students were rated higher or better at final test time than at initial test time in the expressive mode and in the receptive mode on the NYC language Fluency Scale.

2. Each grade as well as the total group demonstrated a statistically significant gain in reading achievement beyond normal expectancy on the Stanford Reading Achievement Test.

3. The 9th grade, the 11th with the 12th grade combined, as well as the total group, demonstrated a statistically significant gain in native language reading achievement on the Pruebas de Lectura Test of the Inter-American Series.

4. A significantly higher percentage of students passed uniform examinations in Science and Mathematics than a comparable group of regular students.

5. A significantly higher percentage of students received passing grades in Social Studies than a comparable group of regular students.

6. The average percentage of attendance of students in the program was almost 15% higher than that of the school as a whole.

7. A higher percentage of students at final test time demonstrated a more positive attitude school and toward themselves than at initial test time or administration.

Conclusions: The majority of the content of the subject areas was in the native language with some elaboration of concepts and content to the English equivalent. In general, the participation of the students was good. There was generally a good relationship between the teachers and the students. Basically the students did not appear to be lost or floundering, but appeared to be involved in the subject matter.

Recommendations: The evaluator feels that, in view of the magnitude of the many bilingual programs throughout the high schools, in all content areas city-wide curriculum services should be offered to the high schools so that each school can benefit from the experiences/materials developed at other schools. More guidance and counseling for students and parents should be provided, with more emphasis on showing both students and parents the importance of the program for the student in terms of academic achievement, graduation and future employment. If and when students are placed in the mainstream, there should be follow-up of these students in terms of their achievement and functioning, as well as their attitude toward school and themselves.

In view of the overall increase in pupil performance and attitude toward school and themselves, the program should be continued.